

Attorney Docket No.: **DRE0167US.NP**
Inventors: **Yellen and Friedman**
Serial No.: **Not yet assigned**
Filing Date: **Herewith**
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This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claim 1 (original): A mask for lithographic applications of a substrate, said mask comprising magnetic nanoparticles.

Claim 2 (currently amended): A method for producing the mask of claim 1 ~~wherein comprising regions of localized magnetic field maxima define the~~ defining a mask on the ~~a~~ substrate via regions of localized magnetic field maxima.

Claim 3 (original): A method for producing the mask of claim 1 ~~wherein comprising defining a mask on a substrate via~~ regions of localized magnetic field maxima and a substantially uniform magnetic field ~~define the mask of the substrate~~.

Claim 4 (currently amended): The method of claim 2 ~~or 3~~ wherein the regions of localized magnetic field maxima are produced by external magnets.

Claim 5 (currently amended): The method of claim 2 ~~or 3~~ wherein the regions of localized magnetic field maxima are produced by magnetic bits embedded in the substrate.

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Claim 6 (currently amended): The method of claim 2 ~~or 3~~
wherein the regions of localized magnetic field maxima are
produced by magnetic bits located on a surface of the
substrate.

Claim 7 (currently amended): The method of claim 2 ~~or 3~~
wherein the regions of localized magnetic field maxima are
produced by magnetic bits programmed to change the position of
regions of magnetic field maxima and minima to attract and
repel the magnetic nanoparticles of the mask.

Claim 8 (original): A method for fabricating a multi-
component pattern comprising:

- (a) defining a first set of regions of localized magnetic field maxima and minima on a substrate;
- (b) applying magnetic nanoparticles to the substrate so that the magnetic nanoparticles aggregate on the first set of regions of localized magnetic field maxima and avoid regions of localized magnetic field minima;
- (c) exposing the substrate to a substrate modifying process to modify sites of the substrate without aggregated magnetic nanoparticles;

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- (d) defining a second set of regions of localized magnetic field maxima and minima on the substrate;
- (e) applying magnetic nanoparticles to the substrate so that the magnetic nanoparticles aggregate on the second set of regions of localized magnetic field maxima and avoid regions of localized magnetic field minima;
- (f) exposing the substrate to a second substrate modifying process to modify sites of the substrate without aggregated magnetic nanoparticles; and
- (g) repeating steps (a) through (f) with additional substrate modifying processes.

Claim 9 (new): The method of claim 3 wherein the regions of localized magnetic field maxima are produced by external magnets.

Claim 10 (new): The method of claim 3 wherein the regions of localized magnetic field maxima are produced by magnetic bits embedded in the substrate.

Claim 11 (new): The method of claim 3 wherein the regions of localized magnetic field maxima are produced by magnetic bits located on a surface of the substrate.

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Claim 12 (new): The method of claim 3 wherein the regions of localized magnetic field maxima are produced by magnetic bits programmed to change the position of regions of magnetic field maxima and minima to attract and repel the magnetic nanoparticles of the mask.